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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/961,283	09/25/2001	Hiroyuki Inagaki	Q66363	5322

7590

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EXAMINER

RO, BENTSU

ART UNIT

PAPER NUMBER

2837

DATE MAILED: 02/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/961,283

Applicant(s)

INAGAKI ET AL.

Examiner

Bentsu Ro

Art Unit

2837

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7,8,11 and 12 is/are allowed.
- 6) ☒ Claim(s) 1-6,9 and 10 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

FIRST OFFICE ACTION

1. Drawing correction is required as follows:
Applicant should label Fig. 16 as a "prior art". Formal drawing for Fig. 16 with the correction is now required.
2. The formal drawings submitted on February 12, 2002 have been received.
3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
4. Claims 1-6 and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Goto et al US Patent No. 5,828,014**.

Goto et al basically teach the same subject matter as claimed. However, if there is a difference between Goto et al teaching and the claims, the difference would have been obvious to a skilled person in the art. The following chart compares the claimed subject matter and Goto et al teaching.

The claims:

1. A vibration reduction control apparatus for an electric motor comprising:

a detecting means for detecting a motor rotational number of the electric motor and outputting a motor rotational number signal based on the motor rotational number;

a filter means for extracting a vibration signal of a predetermined frequency band from the motor rotational number signal;

Goto et al teaching:

Goto et al teach the reduction of resonance frequencies in an elevator system, see text;

Fig. 20 shows a pulse pickup PP1 (a tachometer) connected to the motor 102; Fig. 20 also shows a second pulse pickup PP2 connected to the elevator car 106; it is noted that the reading of PP1 should be the same as that of the reading of PP2 because the motor 102 is the only drive source for the elevator car 106;

Fig. 1 shows a bandpass filter 14; see text column 2, line 35 and column 4, lines 15-18;

and
a feedback control means for performing a
correcting process for the vibration signal.

the phase compensation filter 16 is a
feedback control means, see column 4, lines
18-21.

Examiner's comments:

- With respect to claim 1, a rotational speed of the motor is claimed. However, with respect to claim 1, Goto's Fig. 1 shows a car rotational number (car speed) for feedback control. Goto does not directly use the rotational number of the motor for the control. However, it is very important to note that the elevator car rotational number is basically the same as that of the rotational number of the motor because the motor drives the elevator car, the motor's rotational number is the same as the elevator car's rotational number. Thus, using the rotational number of the motor or the rotational number of the elevator car basically represents the same quantity.
- Goto et al want to control and minimize the vibrational frequencies of the elevator car system, including the governor rope 112, see Fig. 20. Goto's major problem is not the vibrational frequencies of the motor, but the vibrational frequency of the car and rope, therefore, the car's rotational number is used. If Goto want to eliminate the vibrational frequencies of the motor, he would use the rotational number of the motor, instead.
- Claim 1 does not specify the source of the vibration, therefore, claim 1 reads onto Goto's system except the use of the rotational number.
- Even claim 1 is amended to specifically recite the source of the vibration, claim 1 is still not patentable based on Goto's teaching because the same feedback control can be used for the motor alone.

2. A vibration reduction control apparatus
for an electric motor comprising:
a detecting means for detecting a motor
rotational number of the electric motor and
outputting a motor rotational number signal
based on the rotational number;

Same as that of claim 1;
further, Fig. 1 also shows an actual motor
speed signal ω_M ;

a control means for outputting a torque
control signal based on the motor rotational
number signal and controlling the electric
motor;

Fig. 1 shows a torque command τ_M ;

a filter means for extracting a vibration
signal of a predetermined frequency band
including a frequency band of a disturbance
vibration based on the motor rotation
number signal detected by the detecting
means;

same as that of claim 1;
see column 2, line 35 and column 4, lines
15-18;

a correcting means for performing a predetermined correcting process which reduces a vibration of the vibration signal for the vibration signal of the predetermined frequency band extracted by the filter means and obtaining a corrected amount;

wherein the control means performs an addition or a subtraction of the corrected amount obtained from the correcting means

for the torque control signal of the electric motor.

3. A vibration reduction control apparatus according to claim 1, wherein the predetermined frequency band includes at least a resonance frequency band of the electric motor or an assembled body with the electric motor.

4. A vibration reduction control apparatus according to claim 1, wherein the electric motor is mounted on a vehicle body as a driving source of a vehicle.

5. A vibration reduction control apparatus according to claim 4, wherein the predetermined frequency band includes at least the resonance frequency band of a vehicle body with which the electric motor is assembled.

6. A vibration reduction control apparatus according to claim 2, wherein the correcting process by the correcting means includes a PD control calculation.

Fig. 1 shows a phase compensation filter 16;

Fig. 1 shows an adder 19;

the output signal of the adder 19 is a torque control signal τ_M .

Column 4, lines 15- 18 clearly states "*14 is a bandpass filter that extracts the resonance frequency components of the vibration of the rope from the car vibration components at the output of the amp 12.*"

Goto does not teach this feature, however, Goto's vibration reduction feedback control can be used with all other systems, including a vehicle.

Same as that of claim 4.

Fig. 1 shows a PI amplifier 3, not a PD amplifier; however, a control for a system error can always be accomplished by a PD control, a PI control, or a PID control because all PD compensators, PI compensators, and PID compensators are all well known art.

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The subject matter of claims 9 and 10 has been discussed in the claims 1-6, further discussion is un-necessary.

5. Claims 7-8 and 11-12 are allowable.
6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
7. Any inquiry concerning this communication should be directed to Bentsu Ro at telephone number 703 308-3656.

February 3, 2003

Bentsu Ro
Bentsu Ro
Primary Examiner